Children's Outcomes Research Program

Division of General Internal Medicine

SCHOOL OF MEDICINE

UNIVERSITY OF COLORADO **ANSCHUTZ MEDICAL CAMPUS**

DENVER HEALTH

Level One Care for ALL

Barriers to Adult Immunization

Laura P. Hurley, MD, MPH

Assistant Professor, General Internal Medicine

University of Colorado Denver

Disclosures

The investigators have
no relevant financial relationships
with any commercial interests

Objectives

- Review preliminary data from a current study of adult immunization barriers
- Describe current stocking practices of adult vaccines and why this might lead to record scatter and interfere with adult immunization
- Characterize current awareness and use Immunization Information Systems (IIS) among physicians who care for adults

Methods

- Use sentinel physician networks to complete rapid turnaround surveys (Internet or mail) for vaccine policy decisions
- Sentinel physician networks
  - Recruited from random samples of AAFP and ACP
  - Quota sampling done to ensure networks similar to overall AAFP and ACP memberships
- Previous study* demonstrated this method produced comparable results to surveys conducted in random samples of physicians in the AMA Masterfile with respect to:
  - Physician demographics
  - Practice characteristics
  - Attitudes regarding vaccine-related issues

*Crane LA, *Eval Health Prof*, March 2008;31(1):43-64.

Methods

- Survey on Adult Immunization and Preventive Care
  - Survey Period March-June 2012
  - Current Response Rate-58%GIM, 43%FM
- Survey Regarding Use of Barcodes on Vaccines
  - Survey Period Sept. 2011- Jan. 2012
  - Response Rate-58%GIM, 51%FM

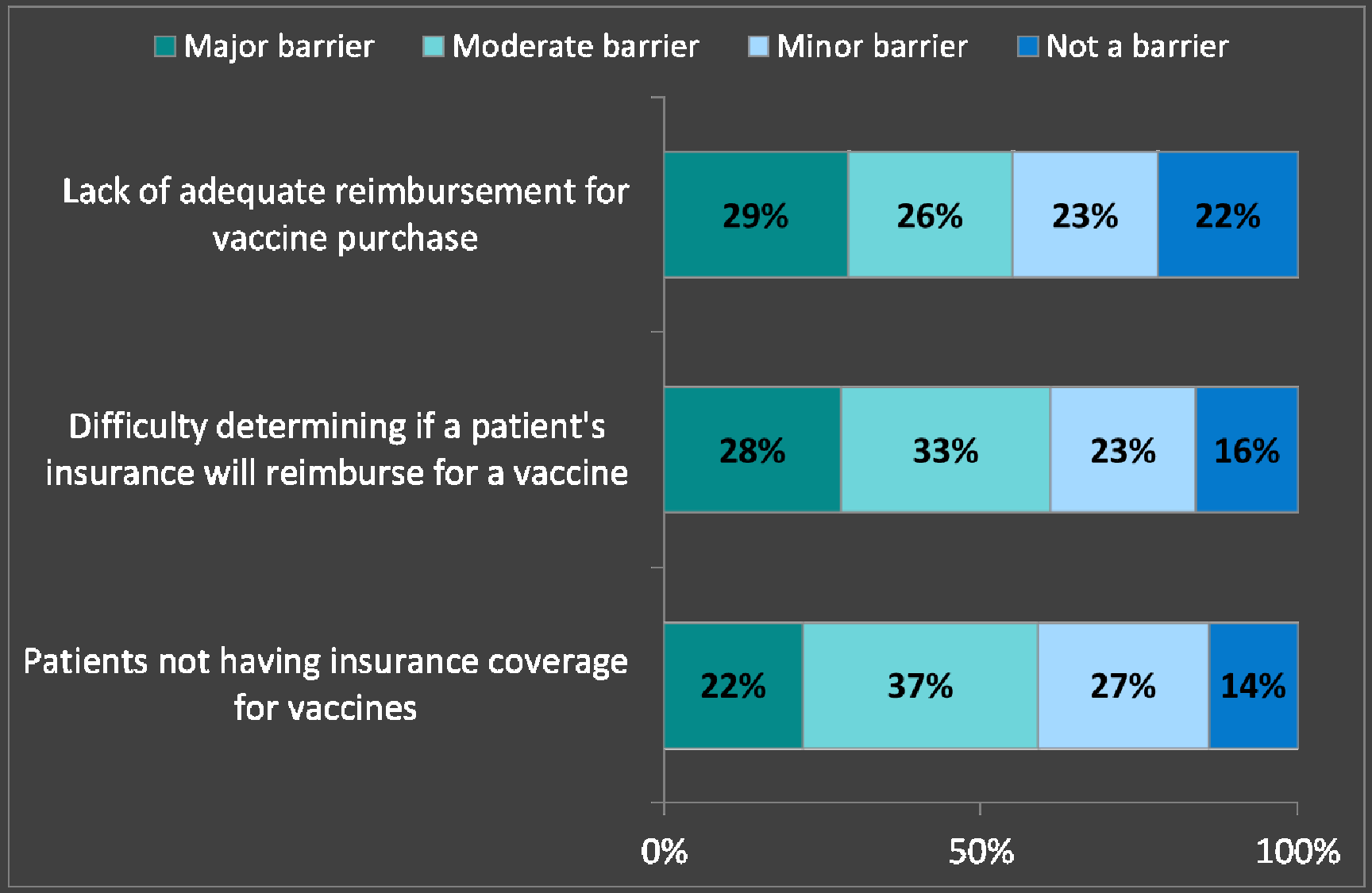
Background

- Our previous work has evaluated vaccine specific barriers
  - Pneumococcal Vaccine Survey 2005
    - Acute problems taking precedence over preventive care
  - Hepatitis B Vaccine Survey 2006
    - Lack of adequate reimbursement
    - ‘Up-front costs of purchasing vaccine
    - Other preventive issues taking precedence
    - Feeling too pressed for time to identify eligible patients

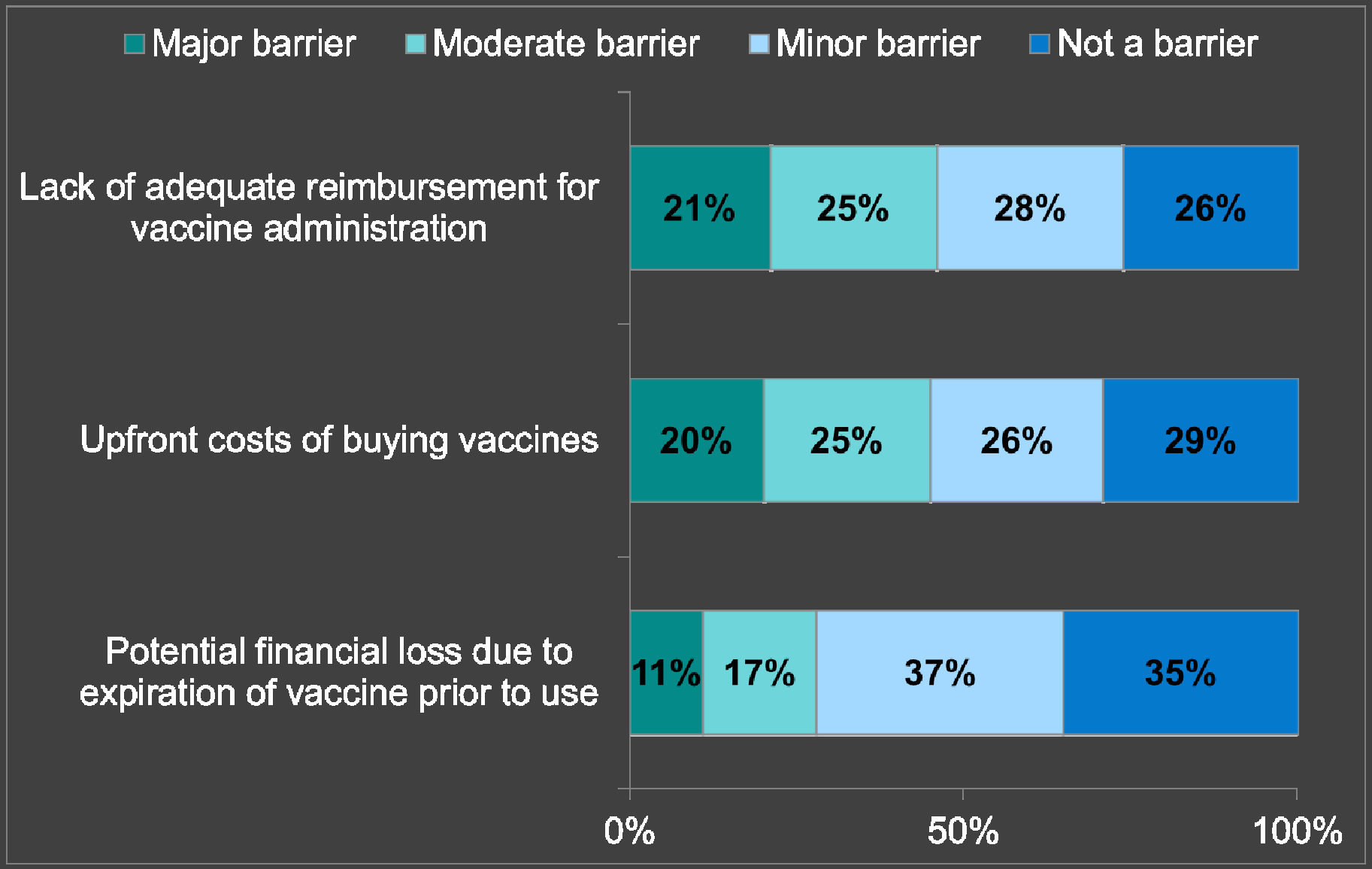
Background

- Herpes Zoster Vaccine Survey 2008
  - Cost concerns for patients (53%)
  - Reimbursement problems for my practice (52%)
  - Up-front costs of purchasing the vaccine (43%)
  - The need for patients to pick up vaccine at the pharmacy (23%)
  - The need for freezer storage (16%)
  - More pressing medical issues taking precedence (12%)
  - Difficulty obtaining the vaccine (12%)

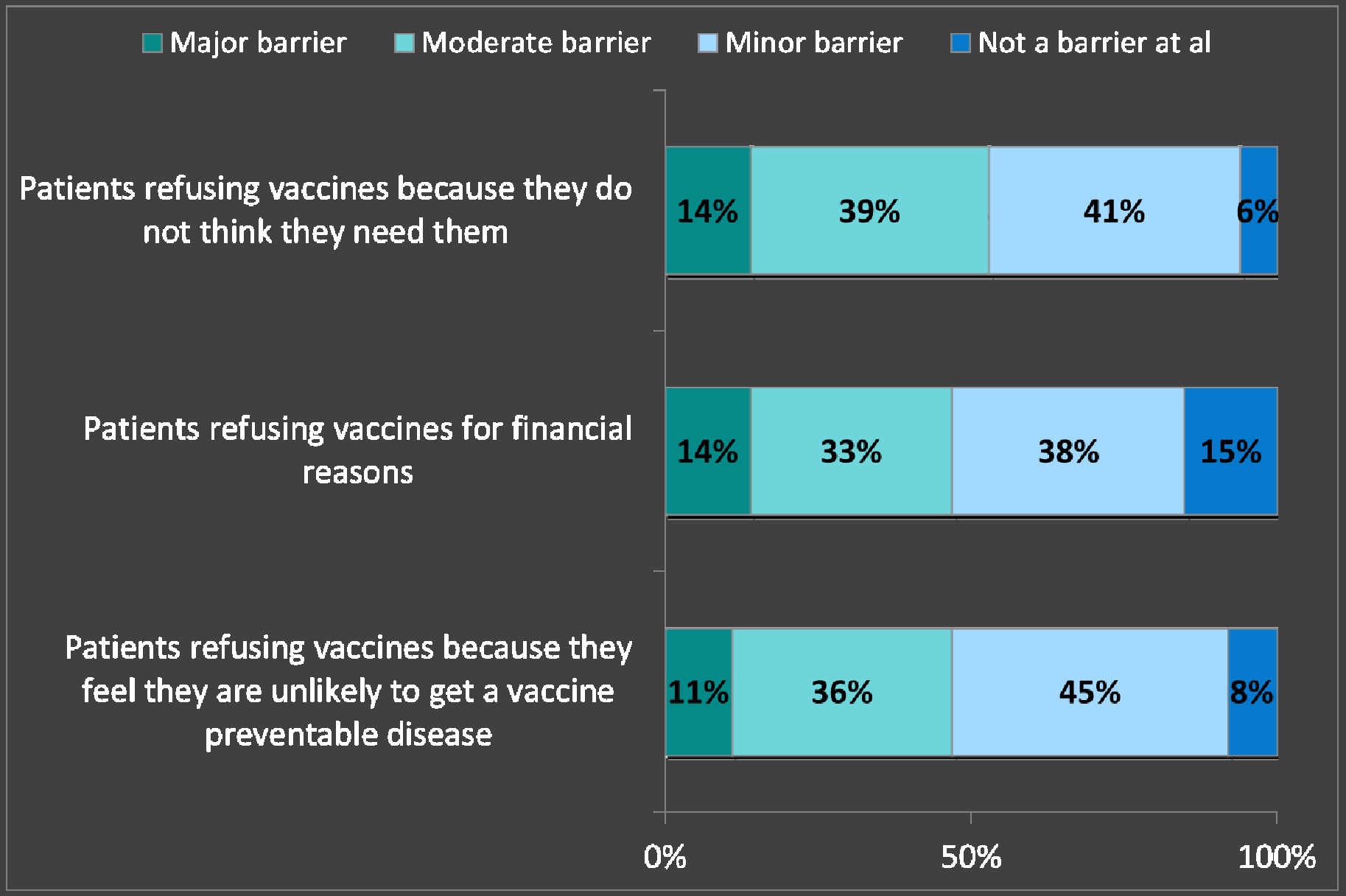
Financial Barriers



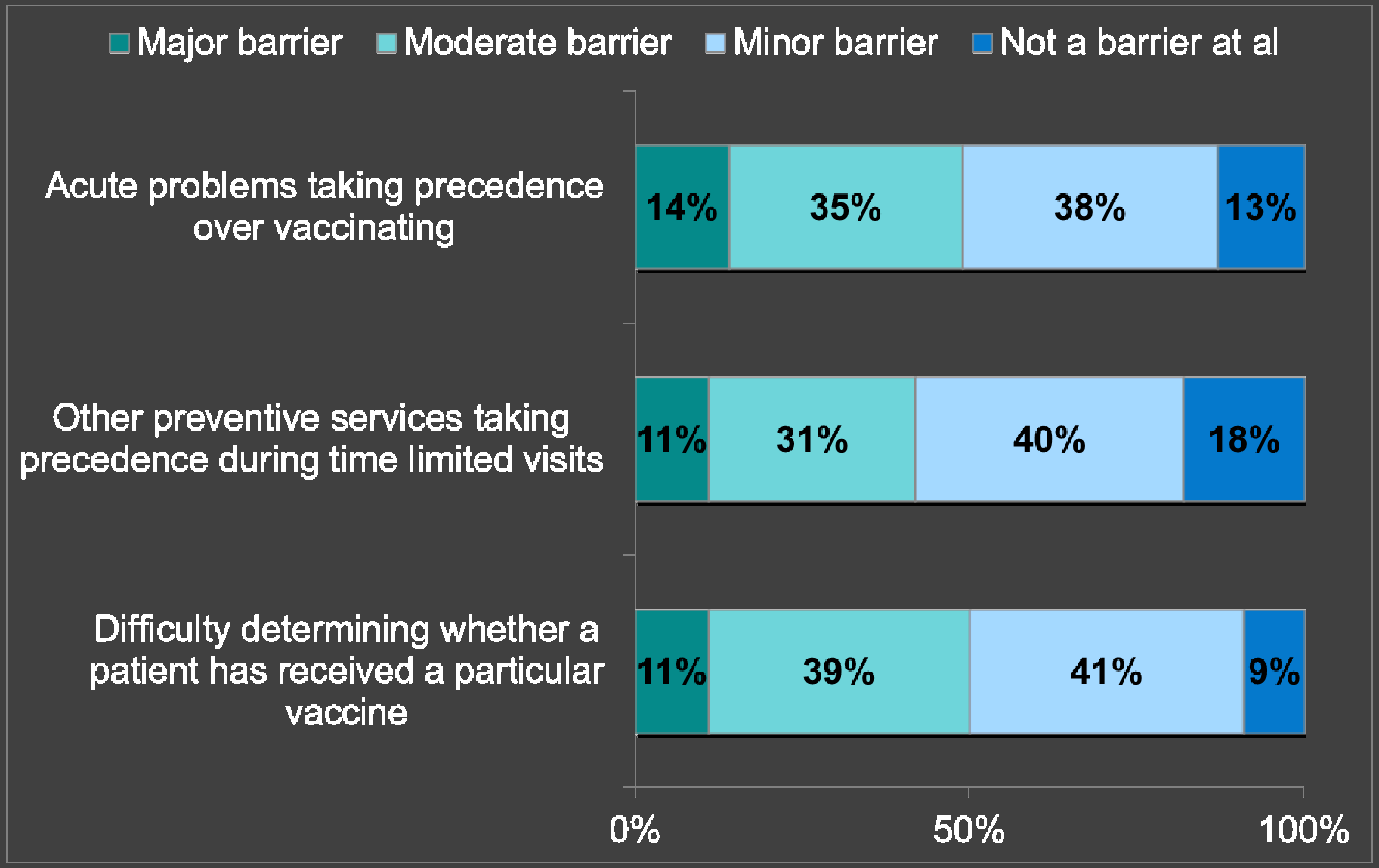
Financial Barriers



Patient Refusal Barriers



Other Barriers



Infrequently Reported Barriers (<10%)

- Not having enough patients needing vaccines to justify the cost of stocking all vaccines
- Patients refusing vaccines for issues of safety or efficacy
- The hassle of storing vaccines
- Patients not coming in regularly for office visits
- The fact that patients can receive vaccines elsewhere
- The hassle of ordering vaccines
- Uncertainty about a particular vaccine's effectiveness
- Not remembering to screen patients for needed vaccines

Stocking of Specific Vaccines by Specialty (n=489)

	% GIM	% FM	p-value*
Hepatitis A	66	76	0.02
Hepatitis B	75	84	0.001
HPV	53	79	<0.0001
High Dose Influenza	41	51	0.03
Injectable Influenza	95	98	0.08
Intranasal Influenza	21	39	<0.0001
Meningococcal	47	82	<0.0001
MMR	52	79	<0.0001
Pneumococcal	98	97	0.64
Td	88	88	0.99
Tdap	93	94	0.41
Varicella	34	75	<0.0001
Zoster	52	54	0.64

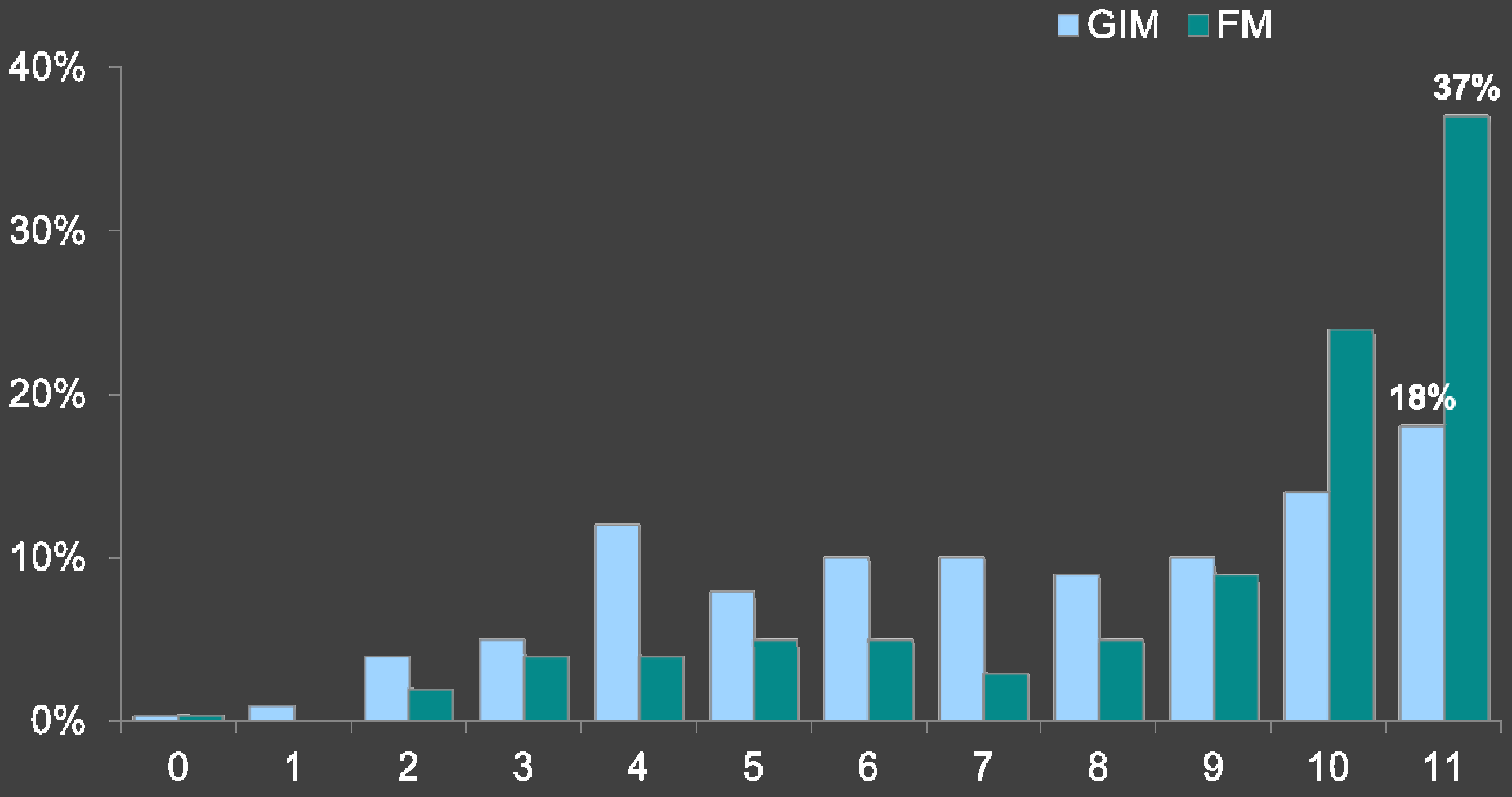
Stocking of Specific Vaccines by Specialty (n=489)

	% GIM	% FM	p-value*
Hepatitis A	66	76	0.02
Hepatitis B	75	84	0.001
HPV	53	79	<0.0001
High Dose Influenza	41	51	0.03
Injectable Influenza	95	98	0.08
Intranasal Influenza	21	39	<0.0001
Meningococcal	47	82	<0.0001
MMR	52	79	<0.0001
Pneumococcal	98	97	0.64
Td	88	88	0.99
Tdap	93	94	0.41
Varicella	34	75	<0.0001
Zoster	52	54	0.64

Stocking of Specific Vaccines by Specialty (n=489)

	% GIM	% FM	p-value*
Hepatitis A	66	76	0.02
Hepatitis B	75	84	0.001
HPV	53	79	<0.0001
High Dose Influenza	41	51	0.03
Injectable Influenza	95	98	0.08
Intranasal Influenza	21	39	<0.0001
Meningococcal	47	82	<0.0001
MMR	52	79	<0.0001
Pneumococcal	98	97	0.64
Td	88	88	0.99
Tdap	93	94	0.41
Varicella	34	75	<0.0001
Zoster	52	54	0.64

Number of Adult Vaccines Stocked by Specialty (n=489)



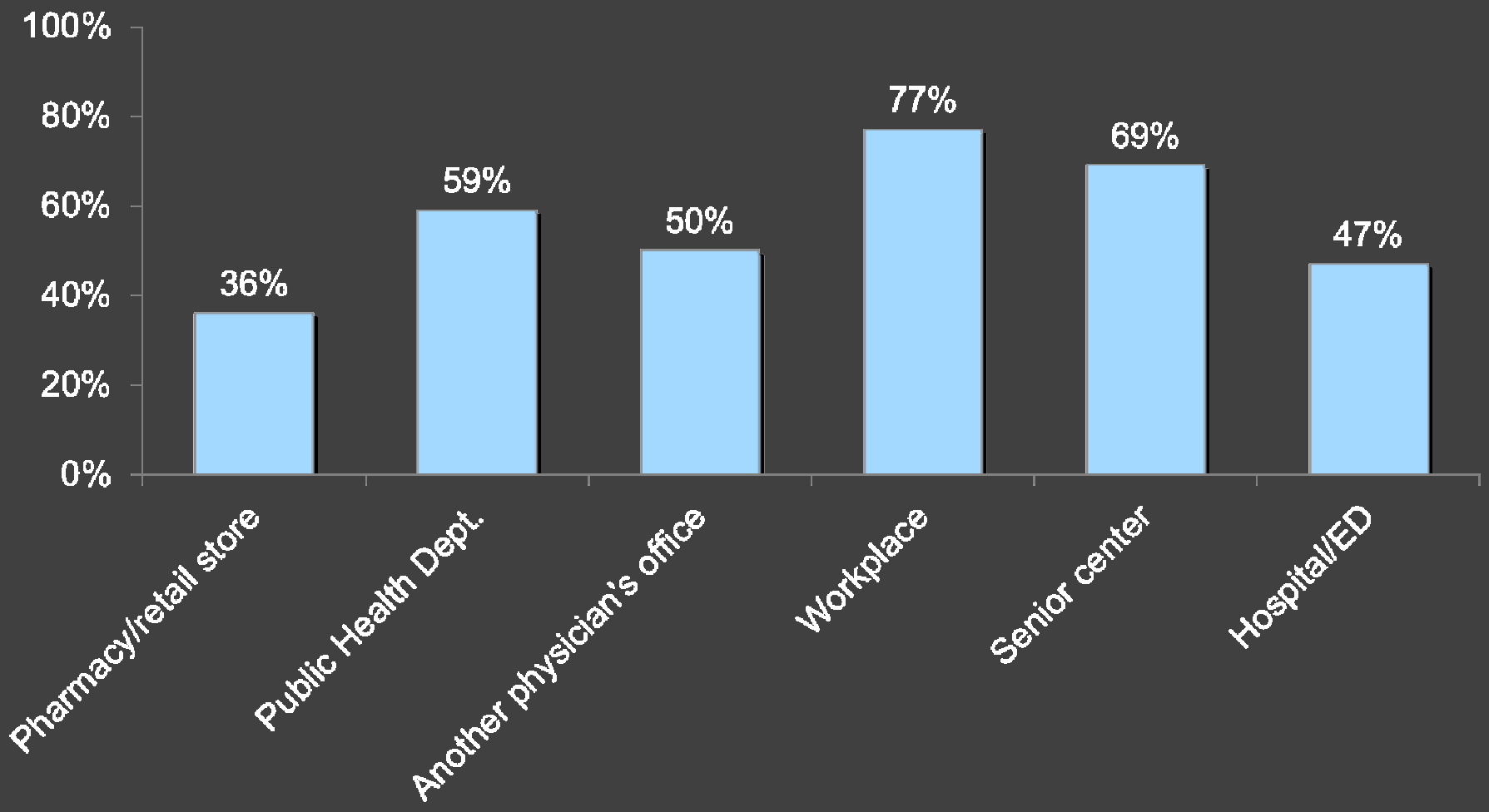
p<0.001 for comparison between specialties

GIM reported stocking a median of 8 vaccines (25th-75th percentile is 5-10 vaccines)

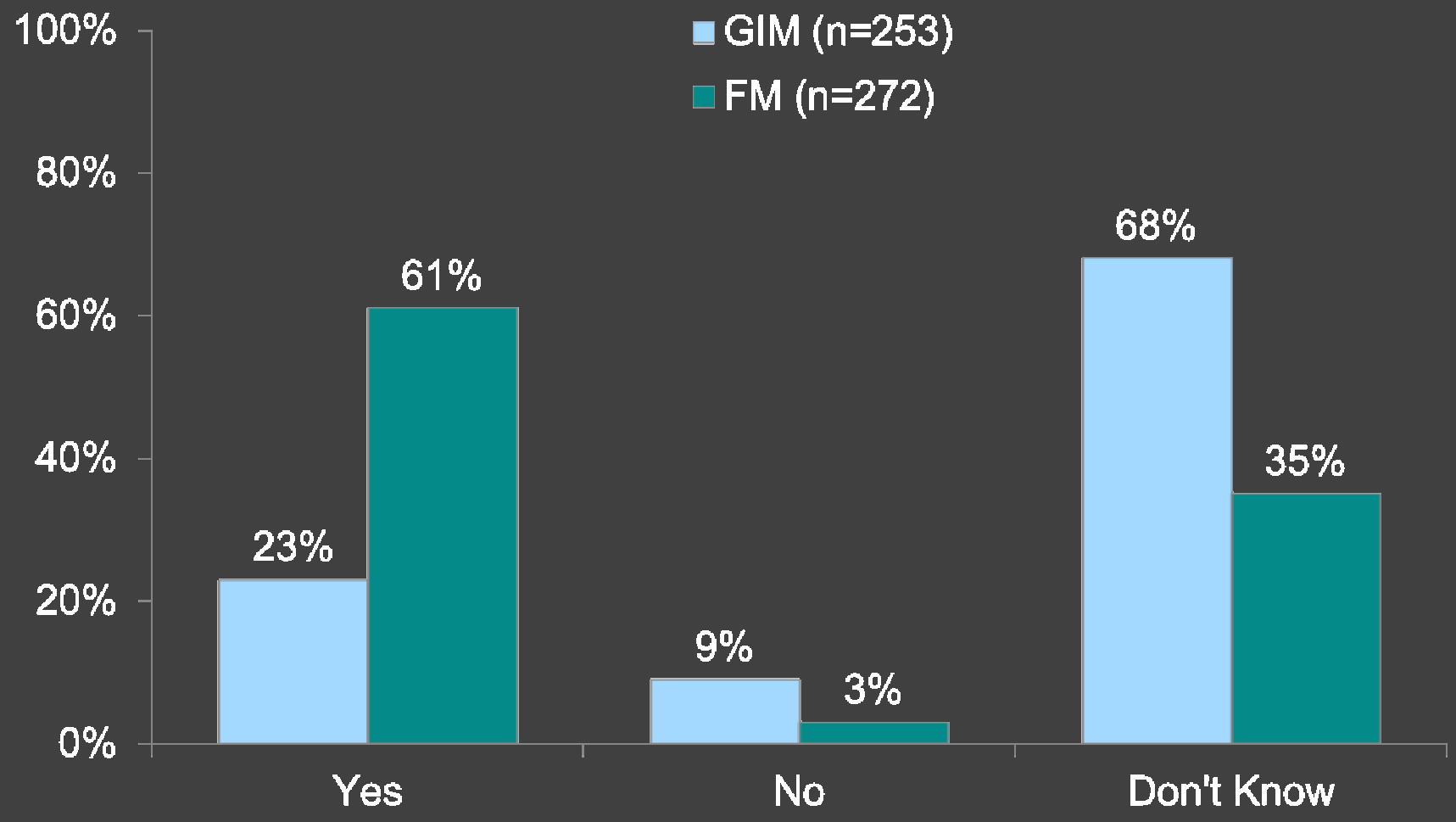
FM reported stocking a median of 10 vaccines (25th-75th percentile is 8-11 vaccines)

- Many physicians are not providing all routinely recommended adult vaccines
- Creates a situation where patients might need to be vaccinated outside of the medical home
- Patients being vaccinated outside of the medical home can potentially lead to a communication gap/record scatter
- Recall that several physicians reported that not being able to determine whether a patient had received a vaccine was a barrier to vaccinating

Proportion of Physicians Who Reported Rarely Being Informed of Patients Receiving Vaccines at Other Sites

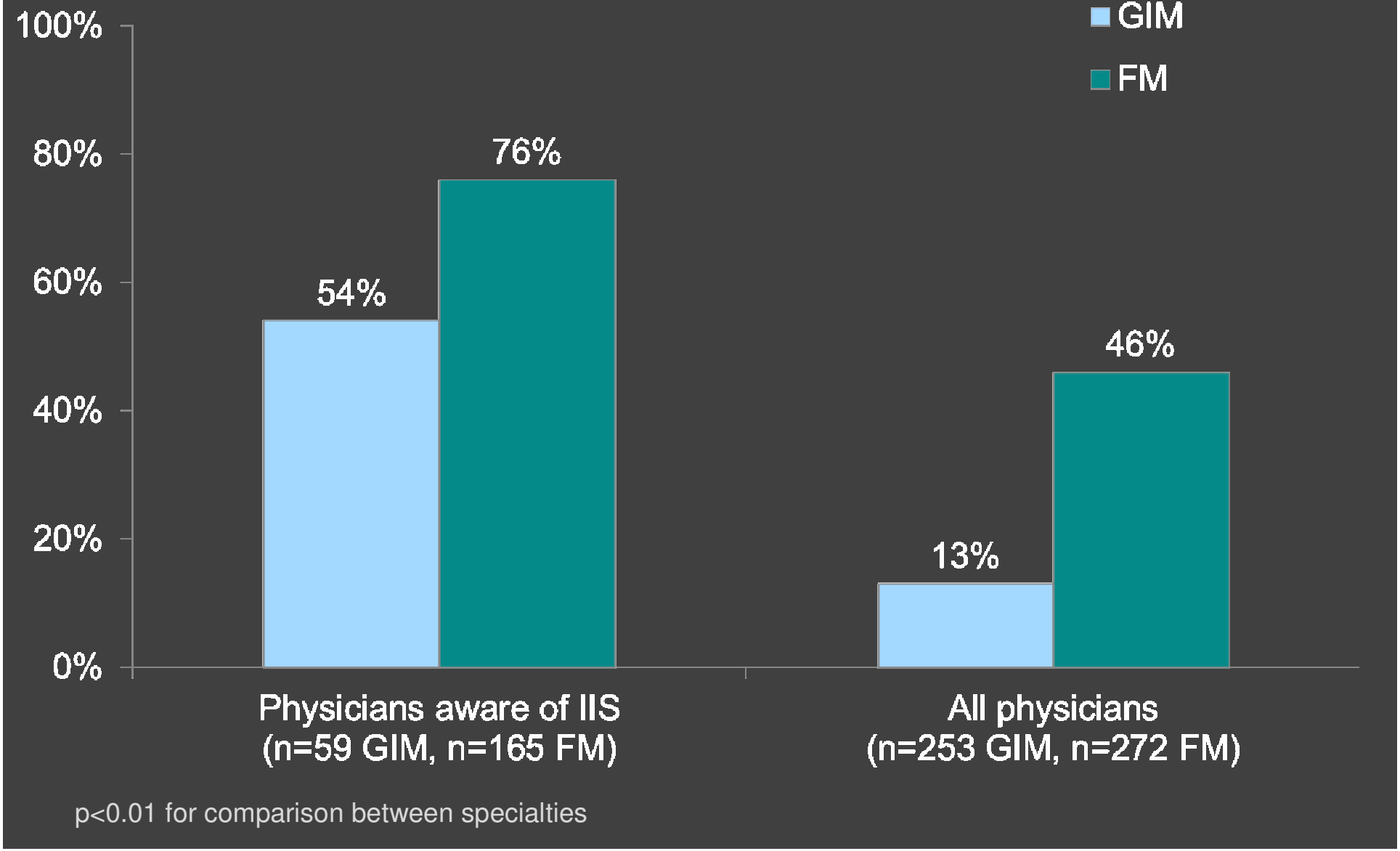


Knowledge of Availability of an IIS Among Physicians from the 49 States with an IIS



p<0.001 for comparison between specialties

Reported Use of IIS



p<0.01 for comparison between specialties

Conclusions

- Physicians frequently report financial issues and patient refusal as barriers to adult immunization
- Many physicians are not currently providing all routinely recommended adult vaccines
- Communication between community vaccinators and primary care physicians is perceived as not occurring most of the time
- Awareness and use of IIS for adult immunizations is limited, particularly for GIM physicians

Implications

- Financial barriers and patient refusal are perceived to be interfering with adult immunization and more detailed research regarding these issues is warranted
- Increasing awareness and use of IIS would allow for centralized information collection for patients receiving immunizations at multiple locations and would allow physicians to more readily track immunization status, potentially reducing missed opportunities for vaccination.

Vaccine Policy Collaborative Initiative

University of Colorado Denver

Principal Investigator – Allison Kempe, MD, MPH

- Laura Hurley, MD, MPH
- Lori A. Crane, PhD, MPH
- Mandy Allison, MD, MPH
- Sean O'Leary, MD, MPH
- L. Miriam Dickinson, PhD
- Brenda L. Beaty, MSPH
- Michaela Brtnikova, PhD
- Andrea Clinger, BS

CDC Collaborators

- Shannon Stokley, MPH
- Carolyn Bridges, MD
- Erin Kennedy, DVM, MPH
- Rafael Harpaz, MD, MPH
- Cindy Weinbaum, MD, MPH
- Ray Strikas, DVM, MPH
- Faruque Ahmed, PhD

Funding

CDC, through Rocky Mountain Prevention Research Center

Strengths & Limitations

- Strengths
  - Achieve high response rates for physician surveys
  - Nationally representative sample
- Limitations
  - Respondents may have differed from non-respondents
  - Sentinel physicians may differ from physicians overall
  - Survey results represent reported practice; actual practice not observed

David Johnson article-2008

- Survey of >2,000 adult consumers and 200 healthcare professionals
- Focused on Td, Influenza, PPV
- Sept-Oct 2006
- Telephone survey
  - Consumers-3.1% RR
  - Providers-3.5% (100 physicians)
- Provider perceived barriers
  - Failure of patients to come for regular office visits (73-88% across vaccines and type of provider)
  - Lack of an effective reminder system (62-77%)
  - Patients dislike of needles (67-71%)
  - Fear of adverse effects (65-87%)
  - Lack of knowledge of disease prevention (62-83%)
  - Inadequate insurance coverage (61-79%)
  - Cost of vaccines (43-62%)

Szilagyi-2005

- Mail survey of primary care physicians
- Randomly selected 668 primary care physicians from AMA Masterfile
- Late 2000
- Only addressed influenza & PPV vaccines
- RR=33% (220/668)
- Barriers to influenza vaccination
  - Vaccine safety concerns by patients (58%)
  - Urgent concerns dominating visit (43%)
  - Inadequate reimbursement (26%)
- Barriers to PPV
  - Urgent concerns during office visits (44%)
  - No patient immunization history (36%)
  - Patient concerns about vaccine safety (31%)
  - Inadequate reimbursement (25%)

Freed-2011

- 2009 Mail survey of primary care physicians from AMA Masterfile
- RR-59%
- 20% IM AND 31% FP stocked all recommended adult vaccines

Vaccine Specific Barriers

- Pneumococcal Vaccine Survey 2005 (RR-74% GIM)
  - Acute problems taking precedence over preventive care (10%)
  - Lack of adequate reimbursement for vaccination (7%)
  - Difficulty determining vaccination history (6%)
  - Patient refusal because insurance does not cover vaccine (6%)
  - The up front costs of purchasing vaccine (6%)
- Hepatitis B Vaccine Survey 2006 (RR-79% GIM, 65% FM)
  - Lack of adequate reimbursement (17%)
  - 'Up-front' costs of purchasing vaccine (17%)
  - Other preventive issues taking precedence over Hep B vaccination (16%)
  - Feeling too pressed for time to routinely assess patients for risk factors (16%)